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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/767,522	01/23/2001	Lee M. Proctor	CE08569R	3399

22917 7590 05/12/2005

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EXAMINER

WOZNIAK, JAMES S

ART UNIT	PAPER NUMBER
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2655

DATE MAILED: 05/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/767,522

Applicant(s)

PROCTOR ET AL

Examiner

James S. Wozniak

Art Unit

2655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-14, 21 and 22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-14, 21 and 22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 May 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. In response to the office action from 3/10/2005, the applicant has submitted a request for continued examination, filed 3/15/2005, amending claims 8-10, 13-14, and 21, while canceling claims 1-7 and 15-20 and arguing to traverse the art rejection based on the limitation regarding the production of a decoder filter state based on the decoding of a first frame (*Amendment, Page 5*). The applicants' arguments have been fully considered, however the previous rejection is maintained due to the reasons listed below in the response to arguments.

Response to Arguments

2. Applicant's arguments have been fully considered but they are not persuasive for the following reasons:

With respect to **Claim 9**, the applicant argues that Chen (5,751,725) in view of Jacobs et al (*U.S. Patent: 5,414,796*) fails to teach decoding a speech frame produces a speech decoder filter state (*Amendment, Page 5*), however Jacobs teaches that pitch filter and codebook excitation parameters depend on a data transmission rate (*Col. 7, Lines 33-36*). Thus, in the case of Chen, if a value of a previous frame rate was determined to be incorrect, the new and correct different frame rate would require different pitch filter and code excitation parameters (updated

parameters) as per the teachings of Jacobs, therefore effectively resetting previous filter parameters to new, updated parameters (see below rejection).

As per the applicants' arguments regarding **claim 10** (*Amendments, Pages 5-6*), the examiner notes that Chen teaches minimum and maximum SER threshold rules as applied to frame-to-frame data rate comparison (*applied threshold rules related to frame-to-frame transmission rates, Col. 11, lines 27-30*). The teachings of Chen anticipate the rules utilized by the applicants' invention as currently claimed because the specific rate-transition rules have not been claimed. The examiner notes that an amendment regarding the invalid frame rate transition rules (full rate to eight rate requiring a half rate transition) and detecting the frame rates by performing a progressive series of threshold comparisons, wherein each threshold corresponds to a specific frame rate (*full rate, half rate, eighth rate- as disclosed in the specification, Pages 6-9*) may overcome the prior art of record.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 8-14 and 21-22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (*U.S. Patent: 5,751,725*) in view of Jacobs et al (*U.S. Patent: 5,414,796*).

With respect to **Claim 9**, Chen discloses:

Receiving a frame and determining the rate of a frame (Col. 6, lines 1-6)

Determining if first frame rate was in error to produce an error determination, by applying more stringent thresholds when an error is suspected in the frame (Col. 9, lines 56-61). Specifically, this is done by comparing a rate of a current frame with a rate of a previous frame and adjusting the thresholds based on the results of comparison (Col. 11, Lines 25-30). Because the difference between frame rates is probabilistically unlikely (-10 %) (Col. 6, lines 16-18), the tightening of thresholds will ensure that transitional frames encoded at $\frac{1}{2}$ and $\frac{1}{4}$ rates will not be mistakenly erased.

Chen does not teach that decoding a speech frame produces a speech decoder filter state, however Jacobs teaches that pitch filter and codebook excitation parameters depend on a data transmission rate (Col. 7, Lines 33-36). Thus, in the case of Chen if a value of a previous frame rate was determined to be incorrect, the new and correct different frame rate would require different pitch filter and code excitation parameters (updated parameters) as per the teachings of Jacobs.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Chen as taught by Jacobs in order to reduce the effects of the wrong filter characteristics on the output of the decoder. By using the techniques taught by Jacobs et al., the system would be able to detect incorrect rate decisions and quickly adjust filter parameters in order to correct for the mistakes, thus avoiding the amplified noises, clicks, etc. in the output of the phone speaker.

As per **claim 8**, Chen does not disclose determining if the first frame was a signaling frame.

Jacobs et al. teach the use of blank frames in order to transmit signaling information, in which case the decoder filter coefficients are updated in order to mask the detected signaling frame (Col. 40, lines 39-47).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Chen as taught by Jacobs in order to reduce the effects of the wrong filter characteristics on the output of the decoder, when the frame contains no speech information. Therefore, the system would quickly adjust filter parameters in order to correct for the mistakes, thus avoiding the amplified noises, clicks, etc. in the output of the phone speaker.

As per **Claim 10**, Chen discloses determining if a transition between frames is invalid by applying tight maximum and minimum SER thresholds when rates differ between adjacent frames (applied threshold rules related to frame-to-frame transmission rates, Col. 11, lines 27-30). Therefore, the transition will be declared invalid if it passed under the old thresholds, but failed to meet the updated thresholds.

As per **claim 11**, Chen discloses determining a full and eighths frame rates for the first and second compared frames, respectively. (Col. 11, lines 15-25).

As per **claim 12**, Chen discloses determining a rate from a group of full, half, quarter and eighth rates (Col. 6, lines 1-6).

As per **claims 13**, Chen teaches the determination of whether a frame rate is correct, while Jacobs teaches setting speech decoder filter parameters based on a frame rate, as applied to Claim 9. Thus, if a previous frame rate is considered to be incorrect as applied to a current frame, a proper frame rate would be determined having pitch filter parameters based upon that rate, thus resetting the pitch filter using the new parameters.

As per **claim 14**, Chen does not disclose "updating the state of the speech decoder filter from a group consisting of a pitch filter, a vocal tract filter, and a post filter."

Jacobs et al. teach the use of pitch filter (elem. 156, FIG. 6), formant filter (vocal tract filter) (elem. 158, FIG. 6) and post filter (elem. 160, FIG. 6) in the design of variable rate vocoder.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Chen as taught by Jacobs to reduce the effects of the wrong filter characteristics on the output of the vocoder. Because the vocoder taught by Jacobs et al. comprises a pitch filter, a formant filter and a post filter, the steps of updating these filters' coefficients would reduce the undesirable noise produced by the phone when the decoder incorrectly identifies the frame rate.

With respect to **Claim 21**, Jacobs recites the resetting of the pitch filter parameters as applied to Claim 1, wherein the pitch filter parameters are part of an adaptive codebook memory (*Col. 11, Lines 54-57 and memory, Col. 44, Lines 10-13*).

With respect to **Claim 22**, Chen teaches the means for detecting a frame rate determination error (no detection of an error would inherently indicate a correct frame rate determination) utilizing an SER threshold for both signaling and silence frames as applied to Claim 1, while Jacobs teaches the means of determining the presence of a signaling frame as applied to Claim 8.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:


Li (*U.S. Patent: 6,141,353*)- teaches a means for detecting if a frame rate is valid and determining a new rate if an expected rate is invalid.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James S. Wozniak whose telephone number is (571) 272-7632 and email is James.Wozniak@uspto.gov. The examiner can normally be reached on Mondays-Fridays, 8:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached at (703) 305-4827. The fax/phone number for the Technology Center 2600 where this application is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the technology center receptionist whose telephone number is (703) 306-0377.

James S. Wozniak
4/15/2005


DAVID L. OMETZ
PRIMARY EXAMINER